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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/748,601   | 12/30/2003  | Chih-Kang Wu         | E0523-00015         | 8668             |
| 8933   | 7590        | 11/24/2004           | EXAMINER            |                  |
| DUANE MORRIS, LLP<br>IP DEPARTMENT<br>ONE LIBERTY PLACE<br>PHILADELPHIA, PA 19103-7396 |             |                      | HAN, JASON          |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2875                |                  |

DATE MAILED: 11/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

|                              |                                      |                                  |  |
|------------------------------|--------------------------------------|----------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/748,601 | <b>Applicant(s)</b><br>WU ET AL. |  |
|                              | <b>Examiner</b><br>Jason M Han       | <b>Art Unit</b><br>2875          |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "151a [Figure 4B]" has been used to designate both recess and locking aperture. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities: The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words and may not contain more than 500 characters. See 37 CFR 1.72(a) and MPEP § 606. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Endo et al. (U.S. Patent 5064276). It should be noted that the examiner has rejected the following claims in light of the specification, but has broadly interpreted the claim limitations [MPEP 2111].

Endo discloses a light source for a liquid crystal device including:

- a lamp housing [Figure 1: (1)];
- a lamp [Figure 1: (4B)];
- a diffuser plate [Figure 1: (6)] ; and
- a support further including: a first member [Figure 1: (4C)] having a body and a groove formed in the body for holding the lamp, whereby the first member attaches/holds the lamp to the lamp housing; and a second member [Figure 1: (4A)] having an elongated body for supporting the diffuser plate when it attempts to sag or distort, whereby the second member extends from the first member.

4. Claim 19 is rejected under 35 U.S.C. 102(e) as being anticipated by Tsai et al. (U.S. Patent 6722773).

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Tsai discloses an illuminating device and tube-like lamp thereof, for use as a backlight within a liquid crystal display [see Field of the Invention], including a support having:

- a first member [Figure 5: (220)] having a body and a groove [Figure 5b: (210a)] formed in the body for holding the lamp, whereby the first member attaches the lamp to the housing [Figure 5: (220c)]; and
- a ring-shape member [Figure 5b: (210a); Column 3, Line 65 – Column 4, Line 4] disposed about a section of the lamp for providing cushioning between the lamp and the first member.

5. Claim 38 is rejected under 35 U.S.C. 102(e) as being anticipated by Tsai et al. (U.S. Patent 6722773).

Tsai discloses an illuminating device and tube-like lamp thereof, for use as a backlight within a liquid crystal display [see Field of the Invention], including:

- a lamp housing [Figure 3: (120, 130); Column 3, Lines 2-5];
- a lamp [Figure 3: (214)];
- a diffuser plate [Figure 3 : (142)];
- a support further including a first member [Figure 5: (220)] having a body and a groove [Figure 5b: (210a)] formed in the body for holding the lamp, whereby the first member attaches the lamp to the housing [Figure 5: (220c)], and further whereby a ring-shape member [Figure 5b: (210a); Column 3, Line 65 – Column 4, Line 4] is disposed about a section of the lamp for providing cushioning between the lamp and the first member.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4, 7, 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. Publication 2002/0044437).

With regards to Claim 1, Lee discloses a backlight assembly for liquid crystal display devices having a support [Figures 3-5: (60)] including:

- a first member [Figures 3-5: (65)] having a body [Figures 3-5: (66-67)] that is attachable to a lamp housing;
- a second member [Figures 3-5: (61)] having an elongated body for supporting a diffuser plate of the backlight assembly when it attempts to sag or distort;
- whereby the second member extends from the first member [Figures 3-5].

Lee does not specifically teach the first member having a groove formed therein for holding a lamp.

However, Lee further discloses lamp-receiving grooves [Figures 2-3: (22)] disposed for supporting and attaching lamps to the housing of the backlight assembly.

It would have been obvious to modify the first member to incorporate the lamp-receiving groove in order to provide a simple, compact support within the backlight unit, whereby "two birds are killed with one stone" in that a single support is used for both the lamps and diffuser plate. This modification may also greatly reduce manufacturing

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costs, as well as provide greater illumination efficiency with less obstructions in the way of the emitted light from the lamps.

7. With regards to Claim 2, Lee teaches a locking member for attaching the first member to the lamp housing [Figures 3-5: (80)].

8. With regards to Claim 3, Lee teaches the second member basically frusto-conical. This limitation is considered a matter of design preference whereby the second member of the reference is functionally equivalent in providing support to the diffuser plate.

9. With regard to Claims 4 and 7, Lee teaches the second member having a groove [Figures 3-5: (62)].

10. With regards to Claim 10, Lee does not specifically teach the first member having a reflective surface, but does teach a reflection plate [Figures 2-5: (40)] for reflecting light irradiated from the lamps to avoid loss of light. It would have been obvious that by incorporating the lamp within the first member that one would want to further modify the first member to have a reflective surface so as to ensure no loss of light. Such a configuration is a matter of optics and design preference. In addition, Lee also teaches that the first member "may be made of metal having high rigidity to reduce the size of the support portion 65 [Page 3, Paragraph 43]," and it is commonly known that there are many metals having a high reflectance.

11. With regards to Claim 11, it is obvious that by incorporating the lamp within the first member that one would want to further modify the second member to be a

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transparent member, preferably diffusive, so as to ensure a proper and uniform illumination.

12. With regard to Claims 12-13, Lee teaches the second member having a locking member that is received by a recess on the first member [Figures 4-5: (63)].

13. Claims 5-6 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. Publication 2002/0044437) as applied to Claims 4 and 7 (respectively) above, and further in view of Marsh (U.S. Patent 6471388).

Lee teaches a backlight assembly having a second member as cited above, but does not specifically teach the second member providing clearance for the lamp nor aiding in holding the lamp within the groove of the body of the first member.

Marsh discloses lampholders that mechanically and electrically couple the lamps and include resilient sockets and clamps [Figures 5, 16-18: (530, 550)] shaped to engage the outer surface of the resilient sockets [Abstract]. Marsh teaches, "While clamp sections 530, 550 could have a variety of shapes and mounting configurations, the inventor has developed a low-cost configuration which obviates the need for additional metal connectors or metal screws and which is detachable to facilitate the replacement of lamps 400... Clamp sections 530, 550 are preferably shaped to distribute forces evenly over the surface of the socket 570. They are also preferably shaped to permit the sections to be quickly decoupled from channel 590 of the optical chassis 515 to facilitate insertion and removal of lamp 400 [Column 17, Lines 19-23...28-32]."



It would have been obvious to modify the first and second members of Lee to incorporate the clamps of Marsh in order to provide a stable and firm support for the lamp, which is commonly seen in the art. With respect to the shape of the clamps, it is also obvious, as taught by Marsh above, that one would want to prescribe a shape that adapts to a lamp for damping vibration and permitting the body of the lamp to flex in response to mechanical vibration or shock, as well as to facilitate a detachable means for easier replacement of the lamp.

14. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. Publication 2002/0044437) as applied to Claim 13 above, and further in view of Marsh (U.S. Patent 6471388).

Lee teaches a backlight assembly, as cited above, having a first member with a recess for receiving a locking member of the second member. However, Lee does not specifically teach the locking member including a locking shoulder that extends through an aperture at a bottom of the recess.

Marsh teaches a locking member [Figure 18: (1805)] including a locking shoulder that extends through an aperture [Figure 16] for holding two members together. Marsh discloses, "FIG. 16 shows an upper perspective view of first clamp section 530... Fig. 18 is a perspective view, from a different angle than that of FIG. 5, showing the second clamp section 550 along with details of hooks 1805 which lock the clamp sections 530, 550 in place [Column 17, Lines 36-37...39-42]."

It would have been obvious to modify the locking member of Lee to incorporate the locking shoulder through an aperture of Marsh to ensure a strong hold between the

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two members. Such a mechanical connection is commonly known and again a matter of design preference, whereby the locking member taught by Lee is functionally equivalent.

15. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. Publication 2002/0044437) as applied to Claim 1 above, and further in view of Tsai et al. (U.S. Patent 6722773).

Lee teaches a backlight assembly as cited above having a support, but does not teach the support having a ring-shape member disposed about a section of the lamp for providing cushioning between the lamp and the first member.

Tsai teaches a ring-shape member [Figures 4-5: (210a, 210b)] disposed about a section of the lamp for providing cushioning for the lamp.

It would have been obvious to modify the support of Lee to incorporate the ring shape member of Tsai in order to immobilize the lamp, and to lessen or absorb the shock of an impact on the lamp [see Column 3, Lines 51-58 of Tsai].

16. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. Publication 2002/0044437) as applied to Claim 1 above, and further in view of Evanisko (U.S. Patent 5394314).

Lee teaches a backlight assembly, as cited above, having a first member with a groove. However, Lee does not specifically teach the groove having a cross-sectional profile slightly greater than a semicircle, nor whereby the lamp snap-fits into the groove.

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Evanisko teaches a reflector [Figures 1-3: (5)] having a cross-sectional profile slightly greater than a semicircle, and wherein a lamp snap-fits into the reflector [see Title].

It would have been obvious to modify the first member of Lee to incorporate the semicircle cross-section and snap-fit of Evanisko to ensure that the lamp is received properly within the backlight unit. Such a mechanical limitation is a matter of design preference that is commonly held in the art.

17. Claims 20-23, 26, 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. Publication 2002/0044437).

With regards to Claim 20, Lee discloses a backlight assembly for liquid crystal display devices including:

- a lamp housing [Figures 2-5: (10)];
- a lamp [Figures 2-5: (30)];
- a diffuser plate [Figures 2-5: (50)]; and
- a support [Figures 2-5: (60)] having a first member [Figures 3-5: (65)] with a body [Figures 3-5: (66-67)] that is attachable to the lamp housing, a second member [Figures 3-5: (61)] with an elongated body for supporting the diffuser plate of the backlight assembly when it attempts to sag or distort, whereby the second member extends from the first member [Figures 3-5].

Lee does not specifically teach the first member having a groove formed therein for holding the lamp.

However, Lee further discloses lamp-receiving grooves [Figures 2-3: (22)] disposed for supporting and attaching lamps to the housing of the backlight assembly.

It would have been obvious to modify the first member to incorporate the lamp-receiving groove in order to provide a simple, compact support within the backlight unit, whereby "two birds are killed with one stone" in that a single support is used for both the lamps and diffuser plate. This modification may also greatly reduce manufacturing costs, as well as provide greater illumination efficiency with less obstructions in the way of the emitted light from the lamps.

18. With regards to Claim 21, Lee teaches a locking member for attaching the first member to the lamp housing [Figures 3-5: (80)].

19. With regards to Claim 22, Lee teaches the second member basically frusto-conical. This limitation is considered a matter of design preference whereby the second member of the reference is functionally equivalent in providing support to the diffuser plate.

20. With regard to Claims 23 and 26, Lee teaches the second member having a groove [Figures 3-5: (62)].

21. With regards to Claim 29, Lee does not specifically teach the first member having a reflective surface, but does teach a reflection plate [Figures 2-5: (40)] for reflecting light irradiated from the lamps to avoid loss of light. It would have been obvious that by incorporating the lamp within the first member that one would want to further modify the first member to have a reflective surface so as to ensure no loss of light. Such a configuration is a matter of optics and design preference. In addition, Lee also teaches

that the first member "may be made of metal having high rigidity to reduce the size of the support portion 65 [Page 3, Paragraph 43]," and it is commonly known that there are many metals having a high reflectance.

22. With regards to Claim 30, it is obvious that by incorporating the lamp within the first member that one would want to further modify the second member to be a transparent member, preferably diffusive, so as to ensure a proper and uniform illumination.

23. With regard to Claims 31-32, Lee teaches the second member having a locking member that is received by a recess on the first member [Figures 4-5: (63)].

24. Claims 24-25 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. Publication 2002/0044437) as applied to Claims 23 and 26 (respectively) above, and further in view of Marsh (U.S. Patent 6471388).

Lee teaches a backlight assembly having a second member as cited above, but does not specifically teach the second member providing clearance for the lamp nor aiding in holding the lamp within the groove of the body of the first member.

Marsh discloses lampholders that mechanically and electrically couple the lamps and include resilient sockets and clamps [Figures 5, 16-18: (530, 550)] shaped to engage the outer surface of the resilient sockets [Abstract]. Marsh teaches, "While clamp sections 530, 550 could have a variety of shapes and mounting configurations, the inventor has developed a low-cost configuration which obviates the need for additional metal connectors or metal screws and which is detachable to facilitate the replacement of lamps 400... Clamp sections 530, 550 are preferably shaped to

distribute forces evenly over the surface of the socket 570. They are also preferably shaped to permit the sections to be quickly decoupled from channel 590 of the optical chassis 515 to facilitate insertion and removal of lamp 400 [Column 17, Lines 19-23...28-32]."

It would have been obvious to modify the first and second members of Lee to incorporate the clamps of Marsh in order to provide a stable and firm support for the lamp, which is commonly seen in the art. With respect to the shape of the clamps, it is also obvious, as taught by Marsh above, that one would want to prescribe a shape that adapts to a lamp for damping vibration and permitting the body of the lamp to flex in response to mechanical vibration or shock, as well as to facilitate a detachable means for easier replacement of the lamp.

25. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. Publication 2002/0044437) as applied to Claim 32 above, and further in view of Marsh (U.S. Patent 6471388).

Lee teaches a backlight assembly, as cited above, having a first member with a recess for receiving a locking member of the second member. However, Lee does not specifically teach the locking member including a locking shoulder that extends through an aperture at a bottom of the recess.

Marsh teaches a locking member [Figure 18: (1805)] including a locking shoulder that extends through an aperture [Figure 16] for holding two members together. Marsh discloses, "FIG. 16 shows an upper perspective view of first clamp section 530... Fig. 18 is a perspective view, from a different angle than that of FIG. 5, showing the second

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clamp section 550 along with details of hooks 1805 which lock the clamp sections 530, 550 in place [Column 17, Lines 36-37...39-42].”

It would have been obvious to modify the locking member of Lee to incorporate the locking shoulder through an aperture of Marsh to ensure a strong hold between the two members. Such a mechanical connection is commonly known and again a matter of design preference, whereby the locking member taught by Lee is functionally equivalent.

26. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. Publication 2002/0044437) as applied to Claim 20 above, and further in view of Tsai et al. (U.S. Patent 6722773).

Lee teaches a backlight assembly as cited above having a support, but does not teach the support having a ring-shape member disposed about a section of the lamp for providing cushioning between the lamp and the first member.

Tsai teaches a ring-shape member [Figures 4-5: (210a, 210b)] disposed about a section of the lamp for providing cushioning for the lamp.

It would have been obvious to modify the support of Lee to incorporate the ring shape member of Tsai in order to immobilize the lamp, and to lessen or absorb the shock of an impact on the lamp [see Column 3, Lines 51-58 of Tsai].

27. Claims 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. Publication 2002/0044437) as applied to Claim 20 above, and further in view of Evanisko (U.S. Patent 5394314).

Lee teaches a backlight assembly, as cited above, having a first member with a groove. However, Lee does not specifically teach the groove having a cross-sectional profile slightly greater than a semicircle, nor whereby the lamp snap-fits into the groove.

Evanisko teaches a reflector [Figures 1-3: (5)] having a cross-sectional profile slightly greater than a semicircle, and wherein a lamp snap-fits into the reflector [see Title].

It would have been obvious to modify the first member of Lee to incorporate the semicircle cross-section and snap-fit of Evanisko to ensure that the lamp is received properly within the backlight unit. Such a mechanical limitation is a matter of design preference that is commonly held in the art.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are cited to further show the state of the art pertinent to the current application:

US Patent 6050700 to Satterfield;

US Publication 2002/0113924 to Saito et al.;

US Publication 2004/0012763 to Yu et al.;

US Patent 6747404 to Rha;

US Publication 2004/0156185 to Wu.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M Han whose telephone number is (571) 272-2207. The examiner can normally be reached on 8:00am-5:00pm.




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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMH



**JOHN ANTHONY WARD**  
**PRIMARY EXAMINER**